Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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A Buprenorphine Program Evaluation Before and During the COVID-19 Pandemic

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The purpose of this project was to evaluate the service delivery (i.e., attendance rate) of a buprenorphine management treatment program and compared patient recovery-related information between service methods. This is a chart review and cross-sectional comparison of pre- versus post-COVID 19 data. In the sample of 28 adults, there was no significant difference in mean attendance rates pre- (99.46%) vs. during-pandemic (96.13%) (t=1.92, p=0.07). There was a significant difference in patient participation in therapy pre- and during-pandemic (X^2=1.98, p=0.03). The use of telemental health services, within a BMT program, may be a viable option when normal in-person services are disrupted.

Keywords: buprenorphine; telemental health; opioid use disorder; medication assisted treatment

Introduction

Opioid use disorder (OUD) affects nearly 16 million people worldwide, 2.1 million people in the United States, and resulted in nearly 500,000 overdose deaths in the United States from 1999-2019 (Dydyk, Jain, & Gupta, 2020; Hedegaard, Minino, & Warner, 2020). The economic burden from the opioid crisis in the United States was estimated at roughly $631 billion from 2015-2018, which included healthcare costs, mortality, criminal justice, education, and lost productivity in the labor force (Reinhart et al., 2018). Medications including buprenorphine, methadone, and naltrexone are all used for medication-assisted treatment (MAT) in combination with psychosocial services for treatment of individuals with OUD (Saxon, Strain, & Peavy, 2021).

Of these three medications, buprenorphine is the suggested first-line medication for individuals with moderate to severe opioid use disorder (Saxon et al., 2021). Buprenorphine is a partial agonist, with a high-affinity to the mu-opioid receptor and has slow dissociation kinetics, making it different from drugs like morphine, fentanyl, and heroin in that it has milder withdrawal symptoms and ceiling effects on respiratory depression (Kumar, Viswanath, & Saadabadi, 2020). Buprenorphine is a schedule III substance compared to methadone, which is categorized as a schedule II substance by the United States Drug Enforcement Administration (DEA). Therefore, during the initiation phase of treatment, methadone often is dispensed to patients on a daily schedule, compared to buprenorphine which is often dispensed bi-weekly or monthly (Saxon et al., 2021). It is used as a type of harm-reduction treatment to prevent overdoses and sustain recovery. It is often used in combination with naloxone, which is an opioid antagonist that is not absorbed orally, but prevents the potential for diversion if the buprenorphine/naloxone were to be injected (Kumar et al., 2020). A significant amount of

evidence supports the efficacy of buprenorphine management treatment (BMT) for OUD. Evidence suggests that BMT has a relatively high adherence rate and is effective at improving rates of sobriety, decreasing accidental overdoses, and decreasing criminal activity outcomes (Blum et al., 2018; Molero et al., 2018; Oesterle, Thusius, Rummans, & Gold, 2019).

Since the COVID 19 pandemic has hit the United States, federal agencies have relaxed the restrictions on Opioid Treatment Programs (SAMHSA, 2020). On March 31st, 2020 the DEA enacted a change in policy to allow the use of telephone evaluations to initiate and maintain buprenorphine prescribing (Drug Enforcement Administration, 2020). Furthermore, on April 28th, 2021 the Health and Human Services Department of the United States released new practice guidelines for the administration of buprenorphine for treating OUD which stated that advanced practice providers registered with the DEA can treat up to 30 patients without completing the previously mandated MAT trainings (Gandotra, 2021).

The COVID 19 pandemic has resulted in a massive increase in demand for telemental health services. Data suggests that pre-pandemic, roughly 7% of mental health encounters were completed via telemental health services, but post-onset of the pandemic there was a near 12-fold increase of roughly 86% of encounters using telemental health services (Pierce, 2020). It is projected that roughly 35% of mental health visits in the future will be completed via telemental health services (Pierce, 2020). In order to operate effective and safe telemental health services, it is imperative to understand the potential positive and negative consequences of this type of service delivery method compared to normal in-person encounters for patients in a BMT program.

Therefore, the purpose of this project was to evaluate the service delivery methods of a buprenorphine management treatment (BMT) program including telemental health (TMH) visits,

in-person visits, or a combination of both. Specifically, the study compared the service delivery method of the BMT program before the COVID 19 pandemic (in-person encounters) to post-onset of the COVID 19 pandemic (either telemental health encounters or combination of telemental health and in-person) by assessing patient attendance rates to encounters. In addition, the study compared recovery related information (e.g., the level of cravings, accessibility/barriers to services, and patient satisfaction) post-onset of the COVID 19 with recovery related information of individuals receiving BMT pre-COVID 19 pandemic in order to explore any differences recovery related information between pre-COVID 19 and during the COVID-19 pandemic. The findings of this project can provide suggestions for future BMT programs that deliver care via telemental health services for patients with opioid use disorders.

Methods

Design and Sample

This project is an evaluation of a change in practice (in-person vs telemental health or combination) which used a retrospective chart review (data from 09/01/2019 – 03/30/2020 to data from 03/31/2020 – 03/31/2021) to compare attendance rates and a cross-sectional, comparative, descriptive approach to explore recovery related information (e.g., the level of cravings, accessibility/barriers to services, and patient satisfaction) among individuals in a BMT program in a local mental health clinic in western Pennsylvania.

Samples included individuals who were ≥ 18 years old, diagnosed with OUD, and were currently being treated at the BMT program in a local mental health clinic. Aim 1 included all patient charts who received BMT from this clinic from 09/01/2019 – 03/31/2021. Aim 2 included all patients in the BMT program who voluntarily agreed to complete the revised Anonymous Survey of Buprenorphine Cravings and Health (Palmer et al., 2019). The sample for

Aim 1 consisted of the same group of patients pre- vs. post-onset of the pandemic. The sample for aim 2 did not have identical groups pre- vs post-onset of the pandemic.

Procedures

This evaluation of a change in practice project received approval from the office-based BMT practice and received a waiver from the University Institutional Review Board (IRB). An honest broker was trained and conducted a retrospective chart review from a sample of 28 individual paper charts as well as electronic health records (EHR) to record patient attendance rates to encounters from 09/01/2019 – 03/30/2020 to from 03/31/2020 – 03/31/2021. Attendance data was de-identified upon collection from the EHR or paper charts. Survey data collected before the COVID-19 pandemic, from Palmer et al. (2019) was used as pre-COVID 19 data. The post-onset of the COVID-19 pandemic data, for Aim 2, was collected using a revised version of the survey that was completed via interview-style questioning and recorded by clinicians, or via patient self-completion if they had an in-person encounter. Survey data was recorded via handwritten completion on a hard copy of the survey in a de-identified way. All data was entered into a Microsoft Excel spreadsheet on a password protected laptop and then stored in the University secure server. These surveys were kept in one folder stored by the project leader.

Measures

Attendance rates. An attendance rate was defined by the percentage of calendar months between 09/01/2019 – 03/31/2021 that included ≥ 1 encounter documentation by the provider in either the EHR or paper chart. A missed monthly encounter is defined as no records of any encounters occurring within a single calendar month based on the retrospective chart review.

$$\text{Attendance rates} = \left(1 - \frac{\#\text{ of missed monthly encounters}}{\#\text{ of months within timeframe of interest}}\right) \text{X } 100$$

Recovery related information. A revised version of the Anonymous Survey of

Buprenorphine Cravings and Health (Palmer et al., 2019) was used to explore cravings, participation in therapy, frequency of PCP encounters, and patient satisfaction with treatment. Newly added questions assessed adverse effects to BMT, socioeconomic changes, patient perceptions of barriers to telemental health services, and worsening symptoms of comorbid conditions.

Data Analysis

IBM SPSS Statistics for Windows, Version 28 (IBM Corp., Armonk, N.Y., USA) was used to analyze data. A paired t-test was used to compare pre-COVID 19 pandemic (in-person encounters alone) versus post-onset of the COVID 19 pandemic (telemental health encounters alone or in combination with in-person encounters) attendance rates. The pre-COVID 19 data, for Aim 2, collected from Palmer et al., (2019) included 27 individuals who had voluntarily completed the survey. The post-onset of COVID-19 data, for Aim 2, included 27 individuals who also voluntarily participated in the survey, and one individual in the BMT program declined to participate. Descriptive statistics, Chi-squared tests, and independent sample t-tests with an alpha level of 0.05 were used to compare recovery related information pre- and post-onset of the COVID 19 pandemic.

Results

Attendance rates

Results indicated that the mean attendance rates for pre- and post-onset of the COVID 19 pandemic were 99.49% (N=28) and 96.13% (N=28) respectively. This difference was not statistically significant (t=1.92, p=0.07).

Recovery related information

Table 1 presents descriptive statistics of recovery related information. There are no

statistically significant differences in number of emergency room (ER) visits, satisfaction with care, frequency of cravings, having a PCP, and frequency of seeing a PCP (all *ps*>.05). However, as indicated by the frequencies cross tabulated in Table 1, there is a statistically significant difference between participation in drug, alcohol, or other types of individual therapy from pre-COVID 19 to post-onset of the pandemic (X^2=5.78, p=0.03).

Table 2 displays descriptive statistics of recovery related information post-onset of the COVID 19 pandemic. Within this specific BMT program, none of the patients reported adverse effects with their treatment post-onset of the pandemic (*N*=27). As seen in Table 2, in terms of socioeconomic changes post-onset of the pandemic, 70.4% of patients denied any changes, 11.1% reported loss of job, 7.4% reported death in the family, 7.4% reported job gain, and 3.7% reported worse financial difficulties (*N*=27). The majority of individuals denied any barriers to TMH (92.5%), 63% of patients reported no worsening symptoms or issues with comorbid conditions, 14.8% reported worsening anxiety, 11.1% reported worsening depression, and 11.1% reported worsening health issues or pain (*N*=27).

Discussion

BMT has a high adherence rate and is effective at improving rates of sobriety, decreasing accidental overdoses, and decreasing criminal activity outcomes (Blum et al., 2018; Molero et al., 2018; Oesterle et al., 2019). However, the COVID-19 pandemic has resulted in significant changes in the health care landscape such as rapid implementation of telehealth services and relaxing mandatory regulations. People with opioid use disorders have traditionally relied on in-person services (e.g., buprenorphine clinics, NA meetings), therefore, understanding the potential positive and negative consequences of using telemental health services for BMT programs is critical if we are to provide adequate continuity of care to this population in order to maintain

their recovery.

The results of this project indicate that the use of telemental health services within BMT programs is unlikely to affect overall patient attendance rates to encounters compared to in-person visits and therefore is a potentially viable option when extenuating circumstances disrupt normal in-person encounters. Although telemental health only requires the patient to have a phone or computer with internet access, one major concern for this is the divide it creates between the socially vulnerable who are most at risk and the patient population who have highly reimbursed care and easy access to their providers via telephone, computers, and internet (Khatri & Perrone, 2020). Certain institutions have attempted to provide phones to those in need to increase accessibility to telemental health services during disruptions in normal service delivery methods such as the social distancing practices of the COVID 19 pandemic (Khatri & Perrone, 2020). Since the onset of the COVID 19 pandemic, pharmacies have functioned as buprenorphine initiation locations and are also being considered as locations for telemental health capable kiosk installments to increase access to providers (Khatri & Perrone, 2020)

The project highlights the potential issues regarding the accessibility patients have to therapy and/or Narcotics Anonymous (NA)/Alcoholics Anonymous (AA) meetings. One possible explanation for the significant difference in therapy attendance pre- vs. post-onset of the pandemic may include the COVID 19 health risk of gathering individuals for group therapy, which is generally a cornerstone method of NA/AA meetings. Another study indicated that therapists who already used telemental health services pre-COVID 19 reported an overall increase in requests for therapy services from current clients, whereas late-adopter therapists reported a decrease in requests for therapy services from current clients (Sampaio, Navarro Haro, De Sousa, Vieira Melo, & Hoffman, 2021). If telehealth services were not being used pre-

pandemic by providers, this may be a potential explanation for the significant decrease in therapy participation observed in this project.

A recent study mentions that the top three concerns of psychotherapists in switching to telemental health services were security/confidentiality, inability to handle emergency situations, and lack of personal training or education in this area (Sampaio et al., 2021). Pre-onset of the COVID 19 pandemic, providers endorsed their lack of training as the largest barrier to using clinical video telemental health services (Perry, Gold, & Shearer, 2020). Another consequence of the lack of training that providers have, regarding telemental health services, is that poor comfortability with telemental health services and needing to provide patient education on how to use these services were cited by mental health providers as main reasons for a recent increase in provider 'burn out' (Sampaio et al., 2021). It highlights the need for increased training and comfortability of the provider, regarding the use of telemental health services in order to appropriately accommodate the increased demand for services.

In regards to the use of a combination of telemental health services and in-person encounters vs. only in-person encounters, none of the patients reported any adverse effects to their BMT treatment when using the combination of delivery of care methods (N=27). Also, there is no difference in the satisfaction level of patients, regarding their care, when using a combination of delivery of care methods. Furthermore, 92.5% of individuals denied any barriers to accessing telemental health services (N=27). All of these results highlight the fact that based on these criteria, telemental health services used in combination with in-person encounters are equally effective compared to a delivery of care method solely relying on in-person encounters.

Moving forward, telemental health services will continue to be utilized at increased rates by mental health providers compared to pre-pandemic rates. Veterans Hospitals and Medicare

have relaxed reimbursement restrictions during the pandemic to create equal pay to providers for in-person and telemental health encounters (Perry et al., 2020). Maintaining the adjustments to government policies, regarding BMT practice guidelines, due to the COVID 19 pandemic will have a large impact on the use of telemental health services in the future. It is essential for advanced practice psychiatric providers, particularly psychiatric mental health nurse practitioners, to receive proper MAT training, acquire appropriate telemental health service training, expand their geographical range for MAT coverage/licensure, and recognize the benefits of telemental health services when it comes to effective implementation of BMT.

The BMT program evaluated in this projected incorporated a few aspects to their program that were likely to benefit the effectiveness of the program. First, nearly all initial encounters meant for buprenorphine initiation were completed in-person, whereas most follow-up maintenance encounters utilized telemental health services. Second, the clinic staff were highly involved in case management and assistance to patients. Third, the clinic provided on-site urine drug screens if patients were unable to complete recommended urine screens at local laboratory facilities. Finally, the clinic had a very flexible schedule throughout the day and actively called patients for their encounters. All of these aspects of this BMT program likely played a role in its effectiveness during the COVID 19 pandemic.

Limitations to this project include the small sample size and its singular setting of practice, which preclude generalizing these findings to the larger population. Nearly all patients in this project were stabilized pre-COVID 19 and predominately receiving maintenance treatment compared to buprenorphine initiation. Considering that this project relied on provider documentation to evaluate attendance rates to encounters, any confounding variables that may cause a deficiency in provider documentation may skew some results. The social distancing

practices of the COVID 19 pandemic may cause providers to work remotely, where access to an EHR is difficult. Other limitations to this project were that there were multiple advanced practice providers who treated patients within this particular BMT program. Different characteristics of providers may affect the overall satisfaction of patients regarding their care. There are no standardized assessment tools to assess the subjective responses to the recovery related aspects evaluated in this project. Finally, it is important to note that within this BMT program providers actively called patients via telephone or video conference for telemental health encounters compared to in-person encounters (pre-pandemic) which required patients to physically present to the clinic. Nevertheless, this project provides valuable information regarding the use of telemental health services in a BMT program.

Further projects are necessary to assess the satisfaction of providers with telemental health services and to assess difficulties patients face in completing their required lab tests when telemental health services are used. Overall relapse rate and initiation of BMT need to be assessed when normal delivery of care methods are disrupted and programs depend solely on telemental health services. Further replication of this data over a larger, more diverse sample is necessary to make stronger recommendations regarding the optimal delivery of care method for BMT programs. Further studies are needed that do not rely solely on provider documentation to evaluate attendance rates so that more accurate conclusions can be drawn in regards to the possible difference in attendance rates between telemental health and in-person visits.

In conclusion, the use of telemental health services within a BMT program may be a viable option, in regards to attendance rates, lack of adverse events, and patient satisfaction, when normal in-person services are disrupted.

Implication for practice

Regulatory changes such as the Comprehensive Addiction and Recovery Act (CARA), signed into law in 2016, launched efforts to increase MAT and use evidence-based opioid treatment programs. This has placed advanced practice nurses on the front lines of the battle against the opioid epidemic through the use of MAT programs such as the BMT program examined in this project. One implication of this project is that, beyond the extenuating circumstance, telemental health services can expand the geographical reach of treatment to underserved rural areas and populations. Current data suggests that less than 40% of individuals have access to MAT (Hancock, Mennenga, King, Andrilla, & Larson, 2019). Moreover, the largest recent increases in opioid mortality and injury occurred in rural states like Kentucky, West Virginia, Alaska, and Oklahoma, which highlights the need for increased accessibility to MAT in these areas (Hancock et al., 2019). There is a geographical disparity amongst providers who are MAT certified in that they are predominantly located in urban areas despite the rapidly growing opioid crisis in rural regions (Cole et al., 2021). Telemental health services have the capability to reach a wider geographical range for treatment and thereby address the difficulties rural areas face due to the opioid epidemic.

We were not well prepared to provide telehealth services due to a rapid shift from in-person visits to telemental health visits during the time of crisis. Roughly 96% of professionals providing psychotherapy reported their undergraduate/graduate university programs did not provide them with any education regarding the use of telemental health services (Sampaio et al., 2021). The incorporation of telehealth education into the educational curricula of healthcare providers should be considered to increase their telehealth competency.

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References

Blum, K., Han, D., Modestino, E. J., Saunders, S., Roy, A. K., Jacobs, W., … Gold, M. S. (2018). A Systematic, Intensive Statistical Investigation of Data from the Comprehensive Analysis of Reported Drugs (CARD) for Compliance and Illicit Opioid Abstinence in Substance Addiction Treatment with Buprenorphine/naloxone. *Substance Use and Misuse*, *53*(2), 220–229. https://doi.org/10.1080/10826084.2017.1400064

Cole, T. O., Robinson, D., Kelley-Freeman, A., Gandhi, D., Greenblatt, A. D., Weintraub, E., & Belcher, A. M. (2021). Patient Satisfaction With Medications for Opioid Use Disorder Treatment via Telemedicine: Brief Literature Review and Development of a New Assessment. *Frontiers in Public Health*, *0*, 1045. https://doi.org/10.3389/FPUBH.2020.557275

Drug Enforcement Administration. (2020). COVID-19 Information Page. Retrieved October 15, 2020, from https://www.deadiversion.usdoj.gov/coronavirus.html

Dydyk, A. M., Jain, N. K., & Gupta, M. (2020). Opioid Use Disorder. In *StatPearls*. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/31985959

Gandotra, N. (2021, April 28). Federal Register :: Practice Guidelines for the Administration of Buprenorphine for Treating Opioid Use Disorder. Retrieved July 26, 2021, from Federal Register- The Daily Journal of the United States Government website: https://www.federalregister.gov/documents/2021/04/28/2021-08961/practice-guidelines-for-the-administration-of-buprenorphine-for-treating-opioid-use-disorder

Hancock, C., Mennenga, H., King, N., Andrilla, H., & Larson, E. (2019). Treating the Rural Opioid Epidemic. *The Journal of Rural Health*.

Khatri, U. G., & Perrone, J. (2020). Opioid Use Disorder and COVID-19: Crashing of the Crises. *Journal of Addiction Medicine*, *14*(4). https://doi.org/10.1097/ADM.0000000000000684

Kumar, R., Viswanath, O., & Saadabadi, A. (2020). Buprenorphine. In *StatPearls*. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/29083570

Molero, Y., Zetterqvist, J., Binswanger, I. A., Hellner, C., Larsson, H., & Fazel, S. (2018). Medications for alcohol and opioid use disorders and risk of suicidal behavior, accidental overdoses, and crime. *American Journal of Psychiatry*, *175*(10), 970–978. https://doi.org/10.1176/appi.ajp.2018.17101112

Oesterle, T. S., Thusius, N. J., Rummans, T. A., & Gold, M. S. (2019, October 1). Medication-Assisted Treatment for Opioid-Use Disorder. *Mayo Clinic Proceedings*, Vol. 94, pp. 2072–2086. https://doi.org/10.1016/j.mayocp.2019.03.029

Perry, K., Gold, S., & Shearer, E. M. (2020). Identifying and addressing mental health providers' perceived barriers to clinical video telehealth utilization. *Journal of Clinical Psychology*, *76*(6), 1125–1134. https://doi.org/10.1002/JCLP.22770

Pierce, B. S. (2020). The COVID-19 telepsychology revolution: A national study of pandemic-based changes in U.S. mental health care delivery. *American Psychologist*, *76*(1), 14. https://doi.org/10.1037/AMP0000722

Reinhart, M., Scarpati, L., Kirson, N., Patton, C., Shak, N., & Erensen, J. (2018). The Economic Burden of Abuse of Prescription Opioids: A Systematic Literature Review from 2012 to 2017. *Applied Health Economics and Health Policy*, *16*(5), 609–632. https://doi.org/10.1007/S40258-018-0402-X

SAMHSA. (2020). *Opioid Treatment Program (OTP) Guidance*. Retrieved from www.samhsa.gov

Sampaio, M., Navarro Haro, M. V., De Sousa, B., Vieira Melo, W., & Hoffman, H. G. (2021). Therapists Make the Switch to Telepsychology to Safely Continue Treating Their Patients During the COVID-19 Pandemic. Virtual Reality Telepsychology May Be Next. *Frontiers in Virtual Reality*, *0*, 36. https://doi.org/10.3389/FRVIR.2020.576421

Saxon, A. J., Strain, E., & Peavy, K. M. (2021, May 5). Approach to treating opioid use disorder - UpToDate. Retrieved July 27, 2021, from UpToDate website: https://www-uptodate-com.pitt.idm.oclc.org/contents/approach-to-treating-opioid-use-disorder?search=opioid use disorder treatment&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

Table 1. Descriptive statistics of recovery related information

		n (%) or *M* (*SD*)		
		Pre-COVID-19 pandemic (*n*=27)	During COVID-19 pandemic (*n*=27)	*t* or X^2 (*p* value)
Number of ER visits		0.70 (0.95)	0.65 (0.94)	0.19 (0.85)
Satisfaction		9.81 (0.48)	9.67 (0.62)	0.98 (0.33)
Frequency of cravings	Never to rare	19 (73%)	20 (74%)	0.01 (0.93)
	Daily to monthly	7 (27%)	7 (26%)	
Participation in drug, alcohol or other type of Individual therapy	No	4 (15.4%)	12 (46.2%)	5.78 (0.03)[1]
	Yes	22 (84.6%)	14 (53.8%)	
Having a PCP	No	1 (3.7%)	4 (14.8%)	1.98 (0.35)[1]
	Yes	26 (96.3%)	23 (85.2%)	
Frequency of seeing PCP	None or as needed	3 (11.5%)	4 (14.8%)	0.12 (1.00)[1]
	Monthly to yearly	23 (88.5%)	23 (85.2%)	

1. Fisher's exact test

Table 2. Descriptive statistics of recovery related information (*N*=27)

Questions	Responses	*n* (%)
Craving management strategies[2]	N/A	16 (47.1%)
	Distraction	8 (23.5%)
	Talking to others – non professional	2 (5.9%)
	Talking to others - professional	1 (2.9%)
	Go to meeting	2 (5.9%)
	Religious	3 (8.8%)
	Think of past consequences	1 (2.9%)
	Medication	1 (2.9%)
Health symptoms related to	N/A	20 (70.4%)

cravings[2]	Pain	5 (18.5%)
	Stress	1 (2.9%)
	Tiredness	2 (5.9%)
	Non-health related	1 (2.9%)
Adverse effect to BMT	None	27 (100%)
Changes in socioeconomic status following the onset of treatment	None	19 (70.4%)
	Loss of job	3 (11.1%)
	Death in family	2 (7.4%)
	Worse financial difficulty	1 (3.7%)
	Gained Job	2 (7.4%)
Barriers to TMH	None	25 (92.5%)
	Difficulty in accessing to phone	1 (3.7%)
	Trouble getting labs completed	1 (3.7%)
Worse symptoms with comorbid conditions	None	17 (63.0%)
	Worsening anxiety	4 (14.8%)
	Worsening depression	3 (11.1%)
	Worsening health issue or pain	3 (11.1%)

2 Multiple responses are available

Highlights

- Appointment attendance rates were similar between in-person appointments alone and in-person appointments in combination with telemental health appointments
- There was a significant decrease of participation in drug/alcohol or individual psychotherapy post-onset of the COVID 19 pandemic compared to pre-COVID 19
- Telemental health services may increase overall access to buprenorphine management treatment, particularly in rural areas.